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THE TORNADOES OF MAY 2 IN VIRGINIA

By H. A. FRISE

A series of tornadoes, visiting no fewer than six separate localities within the State on the same afternoon, is without precedent so far as records of this class of storms in Virginia show. Such was the misfortune to befall the mountain districts of the State on May 2.

That an unusual weather control existed seems evident. The 8 a. m. weather map for that date shows that the distribution of barometric pressure over the eastern United States was particularly favorable for the development of this class of storms. The central area of an energetic depression that embraced the eastern United States was over southern Indiana moving rapidly northeastward. The tornadoes that developed over Virginia were therefore about 300 miles southeast from the central area of the cyclone. In the southeast quadrant, temperatures were rather high, but not as high as might have been the case with clear skies.

Two of the localities visited by tornadoes were west of the Blue Ridge. Rye cove, in Scott County, about 9 miles northwest of Gate City, the county seat, is located on a plateau of about 1,500 feet elevation between two ridges that rise 500 feet above the plateau. These ridges trend northeast-southwest and are about 2 miles distant from the village.

The valley of Cowpasture River in upper Alleghany and lower Bath Counties also lies between two ridges, Beards Mountain and Rough Mountain, that rise to 2,500 feet, the valley being about 1,500 feet. The other localities are in the northern part of the State, east of the Blue Ridge and at lower elevations.

Woodville, Rappahannock County, is a village between two ridges about a mile distant that rise around 500 feet above the valley in which the village is situated. The Blue Ridge, 10 miles to the west, rises to 3,000 feet or more. Woodville is about 16 miles east-southeast from Luray.

Lagrange is in Culpeper County about 8 miles east-southeast from Culpeper and 20 miles southeast of Woodville.

Weaversville, near Catlett, Fauquier County, is about 8 miles southeast of Warrenton. These last two communities are not as near mountain ranges as are the first three.

Hamilton, in Loudoun County, is about 8 miles east of the Blue Ridge, which in that part of the State is around 1,500 feet elevation. This vicinity is about 30 miles northwest from Washington, D. C., and 6 miles northwest of Leesburg, the county seat.

An examination of the weather maps of May 2 shows that the rate of translation of the cyclonic area was a little more than 40 miles per hour, southwest to northeast. Assuming that local disturbances within the influence of the cyclone were carried along at about the same rate, it may have been, although it is rather improbable, that Rye Cove and the Cowpasture Valley were visited by the same tornado, 2 p. m. at Rye Cove and about 4 hours later in lower Bath County, about 170 miles distant. The Valley of Virginia is rather closely settled and it would be remarkable if this storm should have passed over 170 miles without detection. Woodville was struck about 3:30 p. m., only an hour and a half after the Rye Cove disaster and three hours before the storm occurred in Cowpasture Valley. These facts make it necessary to conclude that another tornado developed east of the Blue Ridge. There are indications, however,

that the Woodville storm was identical with that which visited the community north of Hamilton in Loudoun County. The storm at Lagrange and at Weaversville, near Catlett, occurred four and a half or five hours later than that at Woodville. There are conflicting statements as to the time at Lagrange, but it is believed that the storm passed directly from Lagrange to Weaversville.

It therefore seems certain that three¹ separate tornadoes occurred. Each resulted in the death of one or more persons with serious loss of property as well as live-stock killed or maimed. Of the property destroyed there were 4 school buildings, 1 at Rye Cove, 2 in Cowpasture Valley and 1 at Woodville. At Rye Cove the reassembly of school from the noon recess had just been called by the principal of the school, Mr. A. S. Noblin, who is quoted in a news dispatch as follows:

It was raining at the time, 12:55 p. m. central time, and classes were still recessed for noon. About 25 children were in the building, the remainder being on the playground. I was walking down the hall when I saw what looked like a whirlwind coming up the hollow. Trees were swaying and as the whirlwind neared the building it became a black cloud. It struck the building and I believe I yelled. The next thing I remember I was standing knee-deep in a pond 75 feet from where the building had stood. I was badly shaken up and frightened and surprised that I was able to wade out of the water. Bodies of children were scattered over a wide radius.

Twelve children and one teacher were killed outright and 50 injured, many seriously. The fact that only part of the total assembly had entered the building at the time probably accounts for so many escaping death. The building was of oak frame, well constructed, 2-story, and contained 10 classrooms and an assembly room. It was completely demolished and scattered. Mr. I. M. Johnson who viewed the storm and the destruction of the school from a near-by hillside, saw two clouds rush together about a mile down the valley and seemed to form the funnel cloud that reached the school building a few moments later. The school building disappeared before his eyes and a veritable hail of boards and debris followed. The tornado continued on a few miles, but so far as reports indicate, no other settled communities were in its path in that part of the State. Doctor Hart, State superintendent of schools, who visited the scene, stated that it is doubtful if any form of structure would have withstood the storm, but that the hazard to life might be less in a 1 story building in such cases. There were several other buildings destroyed in this village, but the only lives lost were in the school. The estimated loss in property was \$100,000.

At Woodville the tornado was seen when about a mile to the south of the village where a dwelling was moved on its foundation but not damaged otherwise. A few moments later it struck the village and destroyed most of the buildings in it, among them the school building, and while about half of the number of pupils were injured with two of the teachers, only one was killed, crushed in the debris. This was the only fatality at Woodville. The storm continued on through the county, causing extensive damage to farm property. Mr. W. T. Yancey of Woodville, says in regard to this storm:

¹ It is impossible to determine from the geographic position of the places visited by tornadoes whether or not there were three or twice that number of separate storms. Virginia being rather thickly settled it is reasonable to suppose that a tornado cloud even in the air would be seen and reported at more than a single point. The Woodville and Hamilton tornadoes may have been the same storm but there is more or less doubt as to the others being continuous between the places named.—Ed.

The first trace we have of this tornado was about a mile and a half south of the village of Woodville where it moved a large dwelling about an inch on its foundation. From that point it continued in a north-northeast direction dealing death and destruction in its path through the County of Rappahannock. There is not enough of the high school left intact to build a chicken coop. House and scholars all blown away and why all were not killed was a miracle. Some found unconscious 200 yards from the site of the building. Five are in the hospital.

The losses in the county have been estimated at \$200,000.

In the valley of the Cowpasture River are several villages, among them Coronation and Sitlington, in lower Bath County. In these communities property losses were serious, and while a number of persons were injured, none were killed. The storm occurred in this section around 6 p. m., so there were no children in the school buildings at the time. Mr. E. J. Peters, who viewed what appeared to be the formation of the tornado, says that it appeared as if two strong winds met just below his place and formed one current of great velocity, destroying practically everything in its path. Buildings in the center of the path, which was from 250 to 800 yards in width, were destroyed, while those on the border were only partially destroyed. Mr. G. L. Schumaker, postmaster at Covington, followed the storm path for about 12 miles. He reports:

The storm continued about 17 miles. In some cases farmers lost all their property. One orchard, consisting of one hundred and fifty 21-year old apple trees belonging to J. W. White, was destroyed. At Mr. E. J. Peters' place, the roof of the house was taken off and the barn, in which his sister was milking a cow at the time of the storm, was lifted up and carried away. His sister was found some distance from where the barn had stood, under a floor of the barn, one edge of which was resting on a stone wall. She was not injured, nor were the six cows that were in the barn. Poultry houses and poultry were carried away. Some of the chickens were found at a distance, dead, and practically divested of feathers. The property losses in this valley were estimated at \$75,000.

In the vicinity north of Hamilton, the storm path was about 200 yards wide and extended for about 2 miles. At one farm, the house, barn, and other smaller buildings were destroyed and a cow killed. The man and his wife were injured, but no deaths resulted in this section. At other places in this vicinity, damages were sustained to houses and barns and one large brick church. The total loss being estimated at \$50,000.

The Lagrange-Weaversville tornado, which was the last in point of time, struck Lagrange around 7:30 or 8 o'clock. In this vicinity, two persons were killed when their house was destroyed. No details nor estimate as

to property damage sustained in this vicinity was obtained, but to the northeast in Fauquier County, there was greater loss of life and more extensive property damage. Four persons were killed at Weaversville, and another probably fatally injured, but subsequent reports as to this have not been received. There were eight persons injured and sent to hospitals. Two residences were demolished, one a 14-room brick building, and four others greatly damaged. The storm seems to have extended about a mile farther. Rev. George W. Crabtree, of Catlett, has been quoted in a news dispatch, as follows:

I was in my house and heard a terrible roar like several trains. I looked out and saw black clouds swirling overhead. Trees were bent to the ground and the house rattled. It was about 7:30 p. m. A neighbor told me the cyclone had hit down the road and I drove to the scene. All lights were out and trees were across the road, making it difficult to drive. As I reached the place most severely struck by the storm, I saw houses that had been flattened, telephone wires all over the place and debris over a radius of several hundred yards. It was raining in torrents and the wind was still blowing hard. Then came the task of pulling the dead and injured from the ruins.

In addition to the persons killed, one herd of 15 cattle was destroyed, a few of the cattle remaining alive were killed later because of the nature of the injuries. No estimate of the property losses in this community was secured, but it seems probable that they were equal to or greater than those in the vicinity of Hamilton, Loudoun County, where they were placed at \$50,000.

The writer did not visit any of the devastated communities, hence the facts recited were necessarily gathered from those who were near at hand. Direct observation of funnel cloud was made in three instances, Rye Cove, Woodville, and Cowpasture Valley. The lateness of the hour in the other cases probably accounts for lack of definite information as to that feature of the storm's appearance. Reports from observers from all the communities, class them as tornadoes. In the Cowpasture Valley, for at least a part of the storm path, trees were prostrated in one direction, that in which the storm was traveling. But this alone should not lead to the conclusion that it was not a tornado. The demolishing, lifting, and scattering of a building, greater destructiveness near the center of the path than on the borders, are features that indicate tornadic winds. Tornadoes travel rapidly, as a rule, passing any given point in a few moments of time. There is always a terrific noise, carrying consternation to any living thing in its path. Only by observing at a distance can a correct impression of a tornado's outer appearance be gained.

THE TROPICAL STORM OF JUNE 28, 1929

By W. P. DAY

Pressure had been low for several days previous to the 28th over the western portion of the Gulf of Mexico, but it was not until this date that any definite disturbance was more than suspected, a call for special observations being made on the morning of the 28th. A much delayed report from the steamship *Chester O. Swain* (the first vessel report in this region for several days) located the storm off the Texas coast and the following warning was immediately issued:

Hoist northeast storm warning 2 p. m. Galveston to Corpus Christi; disturbance of unknown but probably moderate intensity; central about latitude 27° N., longitude 95° 30' W., apparently moving north-northwestward; will cause strong shifting winds probably gales at times on the Texas coast between Corpus Christi and Galveston.

The storm was of extremely small diameter, but of considerable intensity over a path about 20 miles in diam-

eter from Port O'Connor to San Antonio. The lowest barometer reading probably was not below 29 inches, 29.12 being reported from Port O'Connor, 29.1 at Victoria, and 29.44 at San Antonio. Being of such small diameter, the storm did not last more than two or three hours at any one point, but estimated wind velocities as high as 80 miles per hour were reported. Corpus Christi and Galveston were only slightly affected.

Due to the difficulty in locating the storm, which was apparently in process of rapid development even as it struck the coast, adequate warnings were impossible for Port O'Connor and the southern portion of Matagorda Peninsula, the storm passing Port O'Connor at 4:30 p. m. The storm lasted from 4:30 to 6 p. m. at Port Lavaca and from 6:30 to 8 p. m. at Victoria.